

without setae at the apex; paraprocts with only a slight apical ridge; lobe of the claw of the valvifer longer than broad (fig. 3); the portion of the claw beyond the lobe about one-third the length of the valvifer; coxite with the stylus terminal, one and one-half times as long as broad; external lateral margin of the coxite with a row of heavy setae extending less than one-half the length of the coxite.

Allotype.—♂; same data as type [U.S.N.M.].

Male.—Length: 18 mm. Agrees with the female in all respects except for secondary sexual differences.

Paratypes.—Fifty: 25 ♂, 25 ♀. Mindanao, Davao Prov.: Mt. Apo, June-July (E. A. Mearns): 1 ♂ [U.S.N.M.]; Galo Riv., Oct. 27, 1930 (elev. 6,000 ft.) (C. F. Clagg): 1 ♀ [C.N.H.M.]; From C.N.H.M. Philippine Zool. Exped.: Probably Mindanao Mts. (H. Hoogstraal): 1 ♀; Baclayan, E. slope Mt. Apo (elev. 6,500 ft.) original forest (H. Hoogstraal): 2 ♂, 1 ♀; Meran, E. slope Mt. Apo (elev. 6,000 ft.) original forest (H. Hoogstraal): 2 ♂, 1 ♀; E. slope Mt. McKinley (elev. 3,300-7,900 ft.) beating trees in stunted mossy forest, second growth forest, on ground, bird-meat bait, monkey carcass and meat-baited traps (H. Hoogstraal, F. Werner, D. Heyneman and G. Aleasid) Aug.-Nov.: 20 ♂, 21 ♀ [C.N.H.M.].

ALITOCORIS, A NEW GENUS OF PENTATOMIDAE

(HEMIPTERA)

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The new genus described below contains one previously named species and four new species. Cytological studies conducted at Columbia University under the direction of Professor Franz Schrader involve one of the unnamed species. This paper is written in order to provide a name for this species as well as some information concerning its affinities to related species of Pentatomidae.

The following generic diagnosis is presented in considerable detail in order to reduce duplication of descriptive information for the included species. It is expected that the discovery and inclusion of additional species will require alteration of some of the characteristics mentioned.

Alitocoris, new genus

Form broadly oval with greatest width across third visible abdominal segment; broadly rounded posteriorly and abruptly narrowed anteriorly from humeral angles to apex of head. Noticeably convex dorsally, strongly so ventrally. Anterior portion of pronotum and head moderately declivous.

Head broader across eyes than long; length about equal to width of

vertex plus one eye. Jugal exceeding tylus by no more than the width of a jugum at apex of tylus; apices of jugal separated by their own width or barely contiguous; margins moderately reflexed along, and for some distance in front of the shallow marginal sinuation before the eyes. Marginal process before each eye reduced to a blunt tubercle. Antennal tubercles short, acute, and entirely visible from above. Antennae about half as long as body, second segment not longer than first, third segment longer than fourth, tending to be clavate in males and cylindrical in females. Rostrum slender, reaching well onto abdomen, first segment reaching or almost reaching anterior coxae; second segment longest, surpassing apex of middle coxae. Rostrum attached to head behind a line drawn through base of antennal tubercles, but not behind a line drawn through middle of eyes. Gula about as wide as ventral width of an eye. Bucculae moderately high, not reaching posterior margin of head, with or without an angle or dentation just behind the anterior end of each. Head set in deep concavity in anterior margin of pronotum, ocelli placed well behind line drawn through anterior angles of pronotum.

Lateral margin of the pronotum carinate and sharply to slightly reflexed, more or less straight from humeral to apical angles; in some species, area before margin flattened or even slightly concave. Lateral processes at apical angles of pronotum small, acute or blunt with length not more than diameter of an ocellus. Width across anterior margin of pronotum slightly exceeding width of head across eyes. Humeral angles rounded, with a small tooth or angulation at end of each marginal carina. Hind margin rather regularly convex.

Scutellum longer than wide at base, narrowed gradually to apical third, then broadly rounded to blunt apex. Hemelytra with corium opaque, having about the same color and texture as rest of the dorsum. Apex of membrane attaining or slightly exceeding apex of abdomen. Corium with a pale calloused spot at apex of cubital suture. Outer apex of corium but slightly less than a right angle. Connexivum narrowly exposed from the second or third visible abdominal segment.

Ostiole with a short, narrow, strongly elevated auricle; evaporating areas well defined, truncate apically before or near middle of the metapleurite. Prosternum broadly concave between coxae, meso and metasterna with a pronounced median carina running the length of the two segments. Second visible abdominal segment flattened, next two slightly concave, medially. Spiracle of the first visible abdominal segment covered by metapleurite.

Legs slender, without tubercles or spines, but bearing short, bristle-like setae or spinules on the femora and more noticeably on the tibiae. Tibiae with a broad flat-bottomed groove along the dorsal face.

External genitalia of male.—Hypopygium or genital segment with the cup shallowly concave, the lateral angles and the protuberance projecting prominently in a posterior direction beyond rim. Lateral processes joined with contiguous portions of inferior ridges to form more or less flat-

tened plates, each tending to curve upward along inner margin. When the hypopygium is seated in its normal position these processes together with the hypopygial lip form a false cup which opens ventroposteriorly. Proetiger, a broad apically flattened cylinder with posterior face deflexed and bearing genital opening; flattened apex, rounded and bearing a fringe of short to very long hairs. Claspers, curved, slender, club-shaped processes which emerge from behind inferior ridge and are fringed with hairs as long as those on apex of proetiger.

External genitalia of female.—Genital plates contiguous along their inner margins, in some species parted slightly at inner posterior angles; discal portion of each plate more or less inflated toward posterior margin, the posterior margin being depressed or in part deflexed. Subgenital plates flattened, slightly concave transversely and rounded or obtusely rounded apically. Lateral plates barely produced apically, posterior margins of genital segment, thereby, but slightly concave medially, almost truncate.

Genotype.—*Alitocoris schraderi*, new species.

Relationships.—*Alitocoris* is placed in the tribe Halyini, where it is related to several genera which show close resemblance to *Eurystethus* Mayr and certain other genera now included in the tribe Discocephalini. Within the Halyini, *Alitocoris* appears to be most closely related to *Macropygium* Spinola and *Melanodermus* Stål. The shape of the head before the eyes suggests that *Alitocoris* should occupy a phylogenetic position between these two genera. In *Macropygium* the lateral margin of the head is deeply concave before a strongly produced, almost spiniform, anteocular process. In *Alitocoris* this margin is moderately concave before an obtuse tubercle which scarcely projects laterally beyond its basal attachment at the margin of the eye. Finally, in *Melanodermus* the margin is broadly and shallowly concave with the tubercle before the eyes not at all or barely present.

With the removal of *parrum* Distant to *Alitocoris*, *Macropygium* now comprises a group of species currently confused under the name *reticulare* (F.), all having extraordinarily enlarged genital segments.

Alitocoris schraderi, new species

Easily distinguished from *Alitocoris parrus* (Distant) by its larger size, absence of any flattened or explanate appearance of the lateral margin of the pronotum and by the acute, much elongated lateral angles of the hypopygium.

Color.—Very dark brown almost black, with raised areas between punctures often paler, becoming rufescent or even straw colored in some specimens. Spot on corium at apex of cubitus noticeably raised and yellow. Coxae, trochanters and tarsi light brown, femora and tibiae dark brown. Antenna with segments 1 and 2 dark brown, 3 and basal

half of 4 lighter, apical half of 4 and 5 light brown or at least noticeably paler. Rostrum light brown. A shining yellow spot beneath each spiracle.

Structure.—Dorsal surface deeply punctured; disc of pronotum and scutellum coarsely rugose. Pronotum with lateral margins straight, carinate, distinctly reflexed and with no tendency toward being explanate. Dorsal view of head as in fig. 12. Rostrum reaching to the middle of the fourth visible abdominal segment. Antennae of male and of female as shown by figs. 1 and 2. A posterior view of male genital segment is shown by fig. 17. External genitalia of female as in fig. 13.

Length: Male, 10-11 mm.; female 11-12 mm.

Width: Male, 7 mm.; female 7.5-8 mm.

Type material.—Holotype: ♂, Guatemala, intercepted at Galveston, Tex., on bananas, August 25, 1938, U. S. National Museum Type Cat. No. 59342. Allotype: ♀, Guatemala, intercepted on bananas at New Orleans, by inspectors of Division of Foreign Plant Quarantine, the Bureau of Entomology and Plant Quarantine, July 2, 1936. Paratypes: 1 ♂ and 1 ♀, Turrialba, Costa Rica, June 24, 1948; 1 ♀, May 20, 1948; 1 ♂ and 1 ♀, San Isidro del General, Costa Rica, May 3, 1944, collected by Professor Franz Schrader, who notes that all specimens were collected from low foliage on very dark rainy days and all showed some earth or clay on their bodies when they were captured. Three additional specimens are contained in the U. S. National Museum Collection with data as follows: 1 ♂ and 1 ♀, Zent, Costa Rica, March 12, 1919, collected by J. Zetek, who reported that the specimens were injuring cacao fruits; 1 ♂, Turrialba, Costa Rica, collected by Schild and Burgdorf.

Alitocoris maculosus, new species

Resembles *schraderi* in size; however the female genital plates are more like *pareus*. The connexivum is more broadly exposed than in any of the other 4 species now placed in *Alitocoris*.

Color.—Much lighter than *schraderi*. Pronotum before humeral angles straw yellow, lighter than rest of dorsum, with only numerous scattered punctures fuscous; calli darkened to some extent along posterior and inner margins. Remainder of dorsum dark rufescent with areas between punctures, and veins of corium invaded by light brown, becoming almost yellow in the larger spots, largest such spot located medially on base of scutellum. Head with spot behind each eye yellow, antennae brown or rufescent, with a yellow spot on basal two-thirds of dorsal face of first antennal segment, fourth and fifth segments lighter with basal fifth of fifth segment very light brown. Rostrum pale reddish yellow. Underside of head, thoracic sternites, evaporative area on metapleurite, most of sixth ventral abdominal segment and genital plates of female dark brown

to almost black. Remaining part of venter dark brown interspersed with light brown to yellow, yellowish spots most noticeable near lateral margin of abdominal sternites and just below each spiracle. Legs testaceous, femora and tibiae with numerous dark brown spots, each having a diameter greater than the length of the seta which commonly emerges from the middle of each spot. These spots tend to coalesce on dorsal faces of middle and hind tibiae.

Structure.—Sculpturing of dorsal surface very similar to *schraderi*. Pronotum with lateral margins very shallowly concave before humeral angles then slightly convex before apical angles. The strongly reflexed margin slightly explanate behind the apical process, this process short, flattened and projecting laterally. Connexivum more broadly exposed than in *schraderi*. Dorsal view of head as in fig. 11. Rostrum reaching to the hind margin of the fourth abdominal segment. Antenna of female as in fig. 3. External genitalia of female as in fig. 16. The outer half of the hind margin of the genital plate disappears under a thickened fold which arises about one-third of the width of the plate from the posterior median angle and runs to the lateral angle.

Length: Female, 12.5 mm.

Width: Female, 8.0 mm.

Type material.—Holotype: ♀, Guatemala, intercepted at New Orleans on bananas, November 7, 1935, by inspectors of the Bureau of Entomology and Plant Quarantine; U. S. National Museum Type Catalogue No. 59343. Paratypes: 1 ♀, Guatemala, intercepted at New Orleans, July 2, 1936; 1 ♀, Honduras or Guatemala, intercepted at New Orleans, June 3, 1936. Both specimens were found on bananas.

Alitocoris parvus (Distant), new combination

Macropygium parvum Distant, 1880, Biol. Cent. Amer., Heterop., vol. 1, p. 50, table 6, fig. 2.

Readily distinguished from the other known species of *Alitocoris* by the proportionally shorter third antennal segment. The structure of the female genital plates is intermediate between *maculosa* and *manni*.

Color.—Above and below generally brown with a reddish cast becoming lighter on ridges between the numerous scattered punctures; venter of abdomen more uniformly brown than elsewhere but with yellowish areas near lateral margin of each sternite and a yellow spot below each spiracle. Antennae pale brown, lighter at articulation of each segment. Coxae pale, each with a brown puncture on anterior face. Femora pale with small to large brown spots becoming more numerous and sometimes coalescing on ventral surface near apical fourth. Tibiae pale brown with obscure spots tending to coalesce and form bands around tibiae on basal third and at apex. These bands most noticeable on front tibiae. Tarsi uniformly pale. Connexivum with a yellow spot on middle of lateral margin of each segment.

Structure.—Dorsal surface rather more uniformly punctured than in

related species. Lateral margins of pronotum flattened, slightly concave before edge, the latter slightly concave between humeral and spical angles. Process at apical angle obtuse, flattened and projecting very slightly in a forward and outward direction. Connexivum narrowly and in some specimens not at all exposed. Dorsal view of head as in fig. 8. Rostrum barely reaching posterior margin of third visible abdominal segment. Antennae of male and of female as shown in figs. 4 and 5. A posterior view of male genitalia as shown by fig. 18. External genitalia of female as in fig. 14.

Length: Male, 7.0-7.5 mm.; female, 7.5-8.0 mm.

Width: Male, 4.5 mm.; female, 5 mm.

Type material.—Distant's description was based on a cotype series, all specimens recorded as from Panama. Specimens were listed as from the Distant Collection now belonging to the British Museum, London, and from the Signoret Collection now belonging to the Naturhistorisches Museum, Vienna.

The above description is based on nine specimens from Panama in the U. S. National Museum Collection. All were originally from the Uhler Collection. One specimen bears the determination label, "*Macropygium parvum* Distant," in Uhler's handwriting. Another specimen bears a label, "*Affinis Mazium* Signt.!" also in Uhler's handwriting. It seems likely that these specimens were collected at the same time and place as the type series.

One additional specimen in the U. S. National Museum collection bears the following data: Paraiso, C. Z., Panama, April 24, 1911; August Busck, collector.

Alitocoris brunneus, new species

Slightly larger than *parvus* and uniformly darker in color. The third antennal segment of the male is proportionately longer and more clavate. Easily recognized in the males by the transversely flattened and upwardly curved lateral angles of the hypopygium.

Color.—Almost uniformly dark brown with a slight reddish tint. Antennae a little lighter except for darkened basal half of second segment and pale spot on dorsal surface of first segment. Scattered areas between punctures, especially on jugs and corium tending to become light brown. Rostrum and legs pale except numerous brown spots which are rather evenly scattered over femora and dorsal faces of tibiae. Abdomen without a pale spot below each spiracle.

Structure.—Dorsum and venter smoother than in *parvus*, punctures shallow each with a diameter seldom exceeding that of an ommatidium. Lateral margins of pronotum quite flattened, slightly concave before edge, appearing somewhat explanate either side of calli. Edge slightly concave along middle between humeral and apical angles. Process at apical angle very small, rounded; projecting laterally hardly more than a distance equal to half the diameter of an ocellus. Connexivum narrowly

exposed behind second visible abdominal segment. Dorsal view of the head as in fig. 9. Antenna of male as in fig. 6. Rostrum reaching to the posterior margin of the fourth visible abdominal segment. A posterior view of the male genitalia as shown by fig. 19.

Length: Male, 9 mm.

Width: Male, 5.5 mm.

Holotype: ♂, Honduras, intercepted on orchids at New Orleans, June 5, 1941, by inspectors of the Bureau of Entomology and Plant Quarantine; U. S. National Museum Type Cat. No. 59344.

Alitocoris manni, new species

Very similar in size and shape to *brunneus*, but with the juga longer and almost contiguous before the tylus. Dorsum smoother than *parvus* but not so smooth as *brunneus*.

Color.—Color of dorsum and venter very similar to *parvus* but without any tendency toward coalescence of the spots on the femora and tibiae, also without a well-defined spot beneath each abdominal spiracle.

Structure.—Similar in most respects to *brunneus*. Characterized by the shape of the juga which are almost contiguous before the tylus and have their lateral margins reflexed from base to apex (cf. fig. 10). Antennae of female as in fig. 7. External genitalia of female as shown by fig. 15. Characterized by the swollen lateral posterior angles of the genital plates.

Length: Female, 9 mm.

Width: Female, 5.5 mm.

Holotype: ♀, Palin, Guatemala, May 1924, W. M. Mann; U. S. National Museum Type Cat. No. 59345.

KEY TO THE SPECIES OF ALITOCORIS

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|--------|--|---|
| 1. | Length not exceeding 9.5 mm. | 3 |
| | Length equal to or greater than 10.0 mm. | 2 |
| 2 (1). | Pronotum before the humeral angles pale with only the punctures and part of the calli dark brown | |
| | <i>maculosus</i> , new species | |
| | Pronotum concolorous, entire dorsum fuscous except spot at apex of cubitus | |
| | <i>schraderi</i> , new species | |
| 3 (1). | Combined length of second and third segments of the antennae not equal to length of the fifth segment | |
| | <i>parvus</i> (Distant) | |
| | Combined length of second and third segments of the antennae equal to or exceeding length of the fifth segment | 4 |
| 4 (3). | Juga almost contiguous before apex of tylus, each with lateral margin noticeably reflexed from the anteocular process to the upcurved apex | |
| | <i>manni</i> , new species | |
| | Juga separated before the tylus by at least the lateral diameter of an ocellus; anterior third of jugal margin not reflexed noticeably | |
| | <i>brunneus</i> , new species | |